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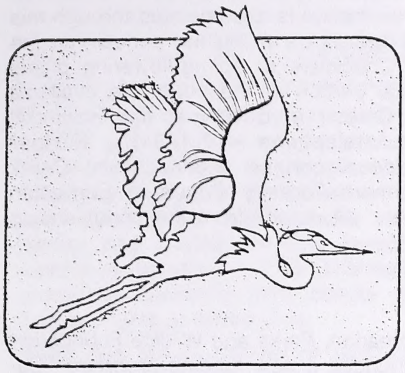


NATURAL AREAS NEWSLETTER

Issue Number 6

April, 1989

EDITOR'S MESSAGE

As spring is just around the corner, we will soon begin preparing for our 1989 field season. Please note that a May species count will be conducted on May 27-28, 1989, sponsored by the Federation of Alberta Naturalists.

If you wish to become involved in this project, it might be the perfect time to tie it in with a visit to your natural area. In addition to counting plant and animal species, it is also a good time to assess site conditions before summer visitors start using the area. Be sure to submit an inspection report after your visit. These reports are vital for keeping our file information up-to-date, and essential in providing effective and timely management of the site. It also assists us with planning for the continued protection of these special places.

In closing, for any stewards making their first visits to their sites this season, or if there is a problem that requires a joint inspection, please feel free to ask for assistance. I would be happy to accompany you.

Enjoy the spring!

Sandra Myers
Volunteer Steward Co-ordinator

PRAIRIE CONSERVATION AND ENDANGERED SPECIES WORKSHOP

The Saskatchewan Natural History Society and the Canadian Plains Research Centre co-hosted a workshop on prairie conservation and endangered species in Regina, January 27–29, 1989. Sessions varied from focusing on individual species (such as piping plovers and burrowing owls), to species groups (such as shorebirds and grassland sparrows), to discussions on management planning, pesticide effects and implications of climatic change on prairie conservation. This workshop was a follow-up to the "Endangered Species in the Prairie Provinces" workshop held in Edmonton in 1986; in many cases, the different sessions focused on the progress/problems since 1986.

Many of the sessions gave us some new information to include in the volunteer steward newsletter, such as the article on shorebirds in this issue. One of the most striking things to come out of this workshop was the realization of the lack of information available on many of the species and plant communities.

Manitoba, for example, is only now completing an inventory of the location of their remaining tall grass prairie sites, although for years (perhaps decades) this has been recognized as one of the most threatened plant communities in Canada. Although 66% of the Canadian population of piping plovers breed on the prairies, there are large gaps in information on their distribution. This species has recently been classified as endangered in Canada, yet little is known about the reasons for their decline. Studies have shown that 64% of the nests fail, and the Saskatchewan population showed a reduction from 2 000 in 1984 to around 50 in 1988. Gull predation, drought, human disturbance and destruction of wetlands may be factors. Actions to protect the piping plover centre on developing recovery plans. It is hoped that these will act as a catalyst to the development of either provincial or national endangered species acts which will provide both legislative protection and give agencies the mandate to protect endangered species.

Presentations in the session on grassland sparrows showed that there is disagreement as to the habitats required by different species. Studies in Alberta suggest that Baird's sparrow requires lightly and periodically ungrazed grasslands, with fescue grasslands seeming to be the most important habitat. With mowing or grazing, densities and numbers have declined, although critical grazing levels probably vary with the type of grassland. Little use of cultivated fields was noted. Observations from Saskatchewan confirmed that sites with heavy ground cover appeared to be the most important, but from Manitoba came the observation that some Baird's sparrows will nest in seeded pastures.

A session on plant conservation in the prairie provinces emphasized that, as with animal species, the lack of endangered species legislation means that no agency has the mandate for species protection.

Information on rare plant species is at a preliminary level for all three prairie provinces, although Alberta has made some progress on collecting the additional information required to determine which plant species may be threatened or endangered.

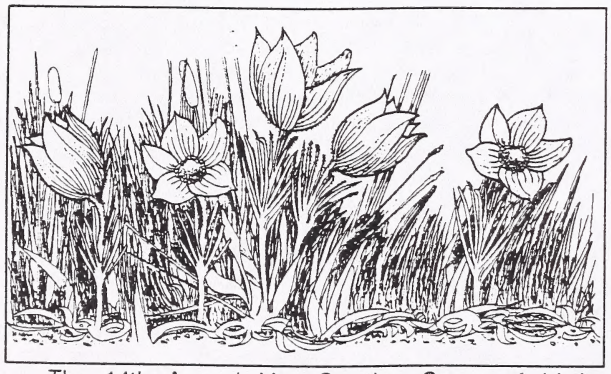
Although the gaps in information were evident, it is encouraging that work is now being done to correct that lack. Projects such as these workshops, Wild West Program, the Prairie Conservation Action Plan, and Prairie for Tomorrow have helped to bring the problems into focus by highlighting information gaps and by providing incentives for corrective actions.

STEWARD HAPPENINGS:

A full house of 35 people turned out for a public meeting in Fairview on January 16, 1989, to discuss the draft management plan for Sandhill Lake Natural Area. The draft plan will be revised, based on the input received from this meeting. . . Volunteers for the Sylvan Lake Natural Area have been successful in persuading the county of Lacombe to pass a Firearms Control Bylaw for this 11 ha parcel situated on the NW shore of Sylvan Lake. The bylaw provides for a fine of $75 on conviction and a 30-day jail sentence on default of payment. . . Alberta Transportation and Utilities has committed itself to conducting an environmental impact assessment of the proposed highway interchange and connecting road adjacent to the Wagner Natural Area. Because of concerns with the impact this development will have on the integrity of the natural area, the Wagner Study Advisory Group, with representatives from the Wagner Natural Area Society and the Natural and Protected Areas Section, has been formed by Alberta Transportation and Utilities to oversee the study. Other members include representatives from the county of Parkland, Alberta Environment, and Alberta Transportation and Utilities.

MAY SPECIES COUNT

by Derek Johnson



The 14th Annual May Species Count of birds, mammals and plants in flower, sponsored by the Federation of Alberta Naturalists, will be held on the weekend of May 27-28, 1989. The idea behind the count is to see how many species in each group can be identified within 24 hours in any geographic location in the province. As well as providing a challenge to see which area can report the most species, the count is also a social event. Novices are encouraged to form groups with more experienced counters; the more people involved, the more interesting the whole event becomes. Valuable scientific information is accumulated through this project, and results from it are published annually in the Alberta Naturalist. Checklists of spring-flowering plants used on the botanical portion of the count are available from Julie Hrapko, Curator of Botany at the Provincial Museum of Alberta (telephone 427-1731). Further information on the count can be obtained from Derek Johnson at the Northern Forestry Centre in Edmonton (telephone 435-7210). All results from the count should be returned to him.

NEW GRANTS

The Alberta Recreation, Parks and Wildlife Foundation (RPW) recently announced a new funding program, "Co-operative Ventures in Parks". Volunteer stewards can apply for money from this lottery-funded program to expand recreation and conservation opportunities in natural areas, to improve interpretive and educational service, to prepare promotional and information activities, and to develop, manage and preserve natural area resources and facilities.

Further information can be obtained from our office or from Recreation, Parks and Wildlife Foundation, Seventh Floor, Harley Court Building, 10045 - 111 Street, Edmonton, Alberta T5K 1K4 (telephone 482-6467).

SHOREBIRD NETWORK

The sight of shorebirds wading in the shallow waters of our lakes and ponds is a common one. But, did you know that these amazing birds undertake a remarkable migration each spring and fall? Many of the shorebirds we see in Alberta are merely "passing through" as they fly from nesting areas in the Arctic to wintering areas as far south as Tierra del Fuego at the southern tip of South America. Along the route of this remarkable migration, shorebirds depend on a chain of wetlands and coastal areas for resting and feeding areas. High numbers may concentrate in a few locations along their flyways - at times, a large proportion of a whole population may concentrate at a single site.

This dependence on relatively few key areas puts large numbers of birds, and even whole populations, at risk from environmental threats. Recognizing this, the Canadian Wildlife Service became involved in the Western Hemisphere Shorebird Reserve Network (WHSRN), a voluntary collaboration of government and private organizations. WHSRN gives international recognition to critically important shorebird habitats and promotes co-operative management and protection of the sites as part of an international reserve network. Launched in 1985, the reserve network now unites wildlife agencies, private conservation groups and other organizations in an innovative, international effort to solve conservation challenges faced by migratory shorebirds and their habitats. By becoming a part of the network, a site gains international recognition and support for local conservation efforts and wetland management.

The following types of sites are recognized. Hemispheric sites host shorebird numbers either in excess of 250 000 birds over the course of the year, or

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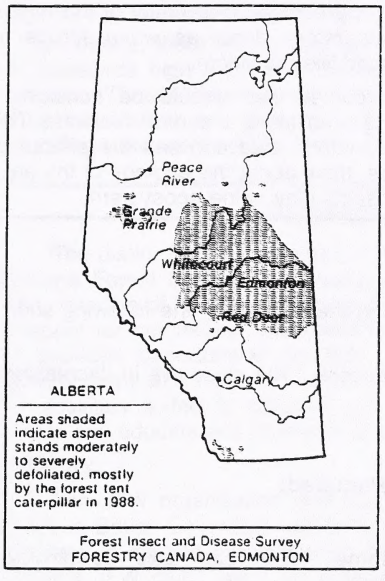
FOREST TENT CATERPILLARS

Over the past few years, many natural areas in the central and north-central parts of Alberta have been heavily infested with forest tent caterpillars. On some sites they have eaten the leaves on virtually all the aspen and poplar trees. Let's take a closer look at the life history and ecology of this insect that has such a voracious appetite. This knowledge may assist in answering questions from people demanding chemical control of this so-called pest.

There are three species of tent caterpillars found in Canada. The eastern, the western and the prairie tent, a subspecies of the western, are the only ones that "pitch" tents. The most notorious, the forest tent caterpillar, despite its name, does not make a tent. The forest tent caterpillar (*Malacosoma disstria*) is the most prevalent and widespread of the tent caterpillars. It occurs from Nova Scotia to British Columbia, and north to the northern-most limit of the range for trembling aspen. The trembling aspen is a principle host tree in Canada and it is in these forest stands that population explosions most commonly occur.

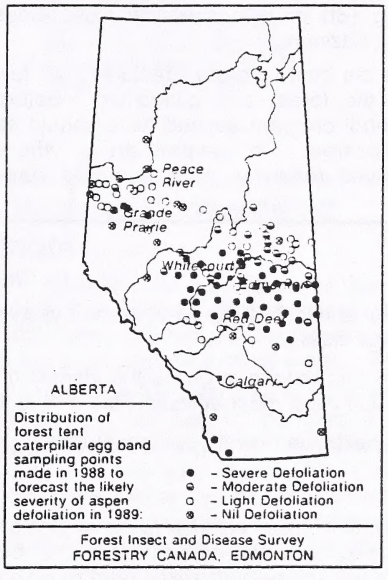


In Canada, outbreaks covering areas as large as 260 000 km² (100 394 sq. mi.) have occurred. In Alberta, similar large outbreaks happen; the area between Edmonton, Wainwright, Lloydminster and north has been devastated repeatedly in the most recent outbreak, which began in 1983. In 1988, the area covered by the infestation was between 140 833 km² (54 380 sq. mi.) to 151 667 km² (58 563 sq. mi.); this was an increase from the 1987 estimates of 71 500 km² (27 608 sq. mi.). The total amount of aspen that has been affected is 29 250 km² (11 294 sq. mi.). The larger area includes agricultural lands and non-treed areas.

Large populations of caterpillars persist for three to six years within a cycle that generally extends 10 years. Some population explosions, however, persist for much longer, as has occurred in Alberta.

The damage to trees caused by forest tent caterpillars is much less severe than it looks, based on the visible widespread defoliation. This is because aspen, the primary food source in Alberta, has the ability to refoliate after losing its entire leaf crop. Much or all of the foliage on a tree may be stripped by mid-June during an outbreak. Twig and branch mortality may result from severe infestations. Tree mortality, however, is less frequent and usually the result of secondary factors such as poor soil conditions or prolonged drought following repeated defoliation. Loss of foliage decreases plant vigor, which makes the trees more susceptible to environmental factors and attack by insects and disease organisms.

Fortunately there is only one generation of forest tent caterpillars per year. The larvae moult four times during their five to eight week phase of active life. After this, they spin cocoons of several layers of silk, usually sometime in June. The cocoons are spun between leaves, on fence posts or under eaves. The pupae develop within the cocoon for 10-14 days. The adult moth emerges from the cocoon at the end of June. Adult moths are several shades of brown, with a wingspan of 2.5 to 4 cm (.98 to 1.6 in.), and live for about 10 days, during which time they mate. Each female lays one egg cluster containing between 50 and 300 eggs. The egg clusters are laid in bands that encircle small twigs. The emergence of caterpillars from the cocoon coincides with the expansion of leaf buds the following spring. This usually occurs in mid-May, but the time will vary depending on weather conditions. The cycle then repeats.



When the young caterpillars first appear, they are about 2 mm (.08 in.) long, but when fully grown they are approximately 50 mm (2 in.) from tip to tip. The forest tent caterpillar is easily recognized by its dark brown body, a wide blue stripe down each side and a row of cream-coloured, keyhole-shaped spots down the back.

Caterpillar Control

Weather is one of the most important factors in controlling outbreaks of forest tent caterpillars. Cold, wet weather immediately after the larvae hatch reduces their numbers significantly. A late spring frost, just before or just after hatching, may kill the insects directly or cause them to die of starvation by killing their food supply. Other factors, including parasites, diseases and predators, also assist in population control. Pathological causes of mass caterpillar die-offs include parasites, fungi, viruses and bacteria which attack various life stages of the forest tent caterpillar. The Sarcophagi fly,

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for example, attacks the insect in the cocoon stage.

In North America, there are 75 species of birds that eat the hairy forest tent caterpillars. In Alberta, there are several forest tent caterpillar-eating species, including chickadees, black-billed cuckoos, blue jays, black-billed magpies, Brewer's blackbirds, red-winged blackbirds and northern orioles. In addition, gray jays eat the egg clusters.

If artificial control measures are being considered, they should be used against the forest tent caterpillar when it is in the early stages of development. The removal of egg masses before hatching is the best method, but this is practical only on small trees and in a small area. The most common and widespread control method is by spraying with the biological insecticide Bacillus thuringiensis (Bt) or with chemical insecticides such as malathion or diazinon.

Alberta's forests are host to many creatures, but few are so disliked as the forest tent caterpillar. Before initiating a spray control program several facts should be reviewed and considered. In several areas where caterpillars are sprayed regularly, their numbers have increased rather than decreased. This can be explained partly by the fact that the majority of the caterpillar's enemies are insects, and the same non-selective "chemical" insecticides that kill the caterpillar also kill their predators.

The second fact to consider is that more prey species are produced than predators. If we poison the prey species, the natural control species (predators) will likely die also. Chemical controls that are non-selective do more to destroy the natural control organisms than they do to control the pests.

Forest tent caterpillars, though unsightly, play an important role in our ecosystem. They provide food for several species of birds and insects, and their droppings and cadavers act as soil builders. Even the devouring of the foliage increases the ecological diversity of the region by allowing such understory plants as white spruce to grow and western wood lilies to bloom.

All facts and circumstances should be considered before recommending or initiating a control method. The next time you visit a natural area and see the effects of forest tent caterpillars, think about the ecology of the area and the role these insects play in the ecosystem.

BIRDING QUIZ

by Chel McDonald

In preparation for spring birding, particularly if you are planning to participate in the Bird Atlas, the following short quiz will sharpen your skills.

The fewer clues you require to guess the identity of this bird, the higher you score. The clues are in decreasing order of difficulty (Clue #1 is most difficult; Clue #10 is the easiest).

Proceed to the next clue only if you cannot identify the bird.

Clues:

1. This 18–21.5 cm male (cock) may have just one, but sometimes may have two drab mates (hens) that look just like him; otherwise both sexes tend to be solitary.
2. Territories are established by both sexes in winter and in spring/summer, although most migrate from Alberta when their habitat is covered by ice and snow.
3. They have two eyelids per eye. The inner eyelid often flashes when they blink.
4. The nest is like a wren's.
5. The song is complex, like a winter wren's, and must be loud.
6. They love to nest on rocky ledges behind waterfalls in mountain areas.
7. These "chickens" prefer to scratch for insects among the rocks on the bottoms of raging streams, although they will take minnows. They may even change their densities to swim on top of the water but they can't get anywhere too fast this way with unwebbed feet.
8. Solid dark grey in colour, with strong legs and feet, this is the only truly aquatic passerine (perching bird).
9. They are named after their distinctive, continual habit of doing pushups on their legs.
10. P R E P I D (unscrambling these letters will identify the species)

No. of Clues Required:

Rating

1	Awesome! You can take us birding anytime.
2	Wow! A real birdbrain!
3	Only goshawks can get ahold of your crown!
4-5	I say, not too much gets past your auricular (ear) patches.
6	Excellent.
7	Good.
8-9	Easy - now we expect this bird on your form card this summer ... **OR ELSE**!
10	Oh well, you dippered out this time but keep an eagle eye out for this bird, eh?

SOURCES: *Audubon Society, Master Guide to Birding.*

Salt and Salt, Birds of Alberta.

Harrison, Field Guide to the Nests, Eggs and Nestlings of North American Birds.

Reader's Digest, Birds: Their Life, Their Ways, Their World.

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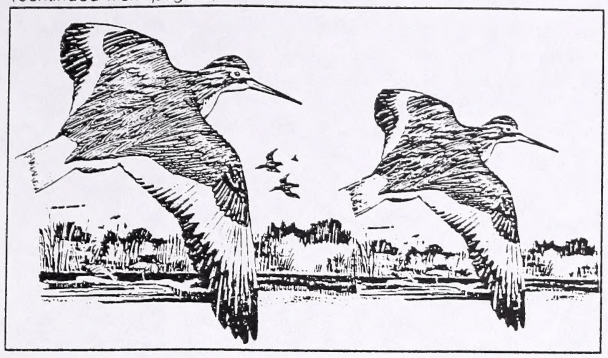

greater than 30% of a species' flyway population. Regional sites harbour either more than 20 000 shorebirds a year, or in excess of 5% of a flyway population.

In Alberta, there are several sites with concentrations of shorebirds high enough to be nominated as regional reserves. Thousands of shorebirds use a series of lakes in central Alberta, near Dilberry Lake Provincial Park and Sounding Lake, north of Consort in southern Alberta.

Studies in which the Natural Areas Program was involved showed that Kimiwan Lake qualifies as a regional reserve. Located in northern Alberta, northwest of Lesser Slave Lake, Kimiwan Lake is important to a variety of shorebirds (as well as geese, swans and gulls).

Although knowledge about shorebirds has been increasing over the past 10 to 15 years, there are still major areas where information is lacking, particularly in the prairie provinces. The Canadian Wildlife Service is co-ordinating a Prairie Shorebird Survey which provides an opportunity for the knowledgeable volunteer to help gather the information needed to understand these fascinating birds and to protect their habitat. Anyone who is interested in participating in shorebird surveys, or who knows of sites that should be surveyed, please contact:

Mr. H. Loney Dickson,

Wildlife Biologist
Canadian Wildlife Service
2nd Floor, 4999 – 98 Avenue
Edmonton, Alberta T6B 2X3
Telephone: 468 8917

STEWARD PROFILE: JUNIOR FOREST WARDENS

The Junior Forest Wardens (JFW), sponsored by the Alberta Forest Service, is a non-profit organization with the objective of fostering an appreciation, awareness and respect for our natural environment in young Albertans. It provides opportunities for kids to learn about the environment with hands-on experience. A wide variety of activities suited to different age groups (from 6–18 years old) educate and challenge members.

History

The JFW organization was started in the spring of 1930 in British Columbia; initially to respond to the need for help in fighting forest fires in British Columbia. The original JFW clubs were for boys but in 1944, female Forest Guards were organized, with some 500 charter members. Presently, most clubs have both boys and girls as members. The JFW Association became a national association in 1961 when the province of Alberta joined.

Since the beginning of the organization, forest fire prevention has been emphasized. Through the years, members have played an important role in fire protection, ranging from fire-spotting and reporting, to actual combat on the fire-line. The program then expanded to include pollution control, ecology, wildlife, communications, and insects and forest diseases. The JFW Program was revised in the 1980s, in response to requests from clubs for "learning by doing" projects and programs that challenge youth to better understand and care for our natural resources. The current program builds on the strong heritage of the Junior Forest Warden Association.

The Junior Forest Warden Association feels that the best heritage we can give our youth is an understanding of our renewable resources, the realization that they are the custodians of these resources, and the skills necessary to maintain and preserve them.

Youth In Action

Several clubs have become actively involved in the Natural Areas Program, from being volunteer stewards to conducting outdoor environmental classes and special projects on specific natural areas. These include:

The Stettler JFW, led by Phil Holton, was the first JFW club and one of the first groups to become a volunteer steward for the Natural Areas Program. They look after and care for the Nevis Natural Area on the Red Deer River, south of Stettler. Ute Wilder has enrolled the Ranchland Black Bears JFW from Calgary as the stewards for Wildcat Island Natural Area. This club recently completed a clean-up of this popular fishing and camping site in the Bow River just a few miles upstream from Cochrane. They hauled out eight bags of garbage that had accumulated over the years. Access to this site is by canoe only. Other clubs involved as volunteer stewards include the Eagles JFW (Calgary; contact Brian McBride), responsible for Bragg Creek Natural Area west of Calgary; and Halfmoon Lake JFW in Thorhild (contact Sandy Szabo), who, as part of the Rainbow Equitation Society, are the stewards for scenic Halfmoon Lake Natural Area southwest of Thorhild. Although not volunteer stewards, the Sherwood Park JFW, under Barb Wispinski, completed a reconnaissance forest study of the Sherwood Park Natural Area. An excellent report summarizing the results of this study was submitted to the Natural and Protected Areas office.

A big Thank-You goes out to all of the Junior Forest Wardens and their leaders from these clubs for doing a great job in assisting us with the important responsibility of protecting and managing these special places. If other clubs are interested in the Natural Areas Volunteer Steward Program, please contact this office for further details.

NEW CONSERVATION INITIATIVES

The prairies and parklands have become one of the most endangered natural regions in Canada. Few remain in their natural states and those that do remain are rapidly disappearing. Of the species which have been lost in Canada, several were prairie animals such as the black-footed ferret and swift fox. Of the species considered to be rare, threatened or endangered in Canada, over one-third are prairie species. In response to this urgent and growing need for prairie conservation, World Wildlife Fund Canada launched the Wild West Program in 1986.

Wild West Program

The conservation of biological diversity found on the Canadian prairies was the primary objective of this program. It had three main components:

1. to draft a prairie conservation action plan for endangered and threatened habitats and species;
2. to mount demonstration projects for the recovery of endangered species; and
3. to increase public awareness of what could be done to conserve prairie wildlife and habitats.

Prairie Conservation Action Plan

Many of you have probably seen the glossy document entitled the Prairie Conservation Action Plan. The development of this action plan was one of the main components of the Wild West Program. Its purpose is to influence policy and attitudes so as to conserve the biological diversity found in the Canadian prairies. It includes a series of goals and actions needed to carry out those goals, and provides a blueprint for prairie-wide conservation and management efforts, against which actions over the next five years can be measured. If you do not already have a copy of the action plan, give Natural and Protected Areas a call, and we will arrange to have one sent to you.

The Wild West Project and the Prairie Conservation Action Plan have resulted in several initiatives in each of the prairie provinces. In Manitoba, inventories of remaining tall grass prairie areas will be completed this year. Work is progressing on identifying the mixed grass and parkland sites, and educational sessions on the value of prairies are being held for municipalities, agricultural representatives, weed supervisors, etc. It is hoped that incentives for prairie protection will be in place by 1994. An endangered species act has been drafted and it is hoped to be passed in 1989.

In Saskatchewan, the signing of the Grasslands National Park Agreement in 1988 brings the protection of up to 350 km^2 (135 sq. mi.) of mixed grassland closer to reality. In addition to existing provincial parks, a parks systems plan is being developed which will emphasize their conservation mandate. Under the Critical Wildlife Habitat Protection Act, 1.8 million acres of public land cannot be sold or broken. The protection of endangered and threatened prairie species, such as the short-horned lizard, is also being considered under the Wildlife Act. Changes to crop insurance so that they no longer work against wildlife protection, and methods of building the prairie conservation action into broad government policies are being looked at.

The Prairie for Tomorrow project will serve to co-ordinate Alberta's activities to implement the Prairie Conservation Action Plan. It is a co-operative program sponsored by World Wildlife Fund Canada and Alberta Forestry, Lands and Wildlife. The project will focus on protection of prairie habitats, support of endangered species management plans, and production of an Alberta Landowners Manual to outline specific projects for landowners. For more information on Prairie For Tomorrow, contact:

Mike Quinn

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9915-108 Street
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